

VHF 7000,
7100US, 7100EU

Operation Manual



NAVMAN

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide a reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- reorient or relocate the receiving antenna.
- increase the separation between the equipment and receiver.
- connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- consult the dealer or an experienced radio/TV technician for help.

IMPORTANT:

1. Some features described in this manual are not available on every model. In particular, DSC functions are NOT available on the 7000.
2. DSC functions will not operate on the 7100US or the 7100EU until your MMSID has been entered. Refer to section 4.2 for details.
3. The radio channels installed into the Navman VHF radio may vary from country to country, depending upon the model, and government or national communications authority regulations.
4. Navman NZ Ltd recommends that you check the radio operating licensing requirements of your country before using the Navman VHF radio. The operator is solely responsible for observing proper radio installation and usage practices.
5. A DSC warning label is supplied with the 7100US. To comply with FCC regulations, this label must be affixed in a location that is clearly visible from the operating controls of this radio. Make sure that the chosen location is clean and dry before applying this label.

It is the owner's sole responsibility to install and use the instrument in such a manner that will not cause accidents, personal injury or property damage.

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This manual represents the Navman VHF 7000, 7100US, and &7100EU radios at the time of printing. Navman NZ Limited reserves the right to make changes to specifications without notice.

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Section 1 - General Information

1-1 Features

Congratulations on your purchase of a Navman VHF 7000, 7100US, or 7100EU marine band VHF radio. All of these models provide the following useful features:

- prominent channel display
- adjustable contrast settings for the LCD
- adjustable keypad backlighting for easy night-time use
- waterproof and submersible to comply with JIS-7
- GPS latitude and longitude (LL) and time display (when connected to a GPS)
- choice of High or Low (25 W or 1 W) transmission power
- top centred PTT button for comfortable left- or right-handed use
- powerful 4 W external audio output
- access to all currently-available marine VHF channel banks (USA, Canada, International) including weather channels where available
- special CH16 or CH16/9 key for quick access to the priority (international distress) channel
- special 3CH key to select your three favourite channels
- PSCAN (similar to dual watch) facility

In addition, the VHF 7100 models also provide:

- DSC (Digital Select Calling) capability that meets USCG SC101 and Class D Standards. *7100US only.*
- DSC (Digital Select Calling) capability that meets EC Class D Standards. *VHF 7100EU only.*
- DISTRESS call button to automatically transmit the MMSID and position until an acknowledgement is received
- easy access to a buddy list of up to 20 favourite people
- MMSID storage for three favourite groups
- Group Call and All Ships Call facility
- LL position polling information
- Weather alert facility. *VHF 7100US only.*
- ATIS facility for inland waterways. *VHF 7100EU only.*

1-2 Customizing your Navman VHF Radio

You can customize the radio to suit your individual preferences. Some preferences can be set directly through the keys as explained in this Section.

Other preferences are set up through the built-in menus and these are explained in the other Sections.

1-3 How to Display and Navigate Menus

1. Hold down MENU (or CALL/MENU). Note that only four menu items can be displayed at any one time on the screen.
2. Press + CH - to scroll up and down the menu until the cursor is positioned at the desired option. Press ENT to display that option.
3. Make any entries or changes as explained in the following section.
4. Press ENT to confirm changes. Otherwise, press ESC to keep the original entry.
5. Press ESC to backup one screen or exit. Any changes are active as soon as you exit the screen.

1-4 How to Enter Alphanumeric Data

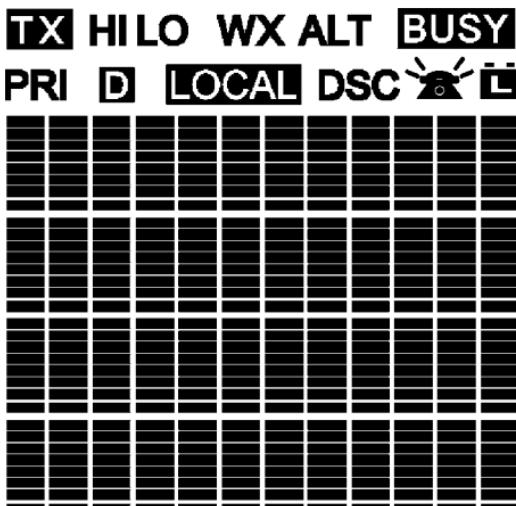
If your radio does not have the optional alphanumeric microphone, use the + CH - key to enter alphanumeric data.

Press - to count through numbers, or hold down to scroll rapidly to the desired number.

Press + to step through the alphabet, or hold down to scroll rapidly to the desired character.

If you make an error, press - until < is displayed, then press ENT to backup and correct the entry.

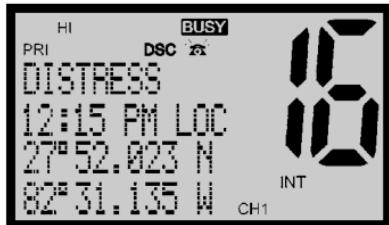
1-5 LCD Symbols and Meanings



This simulation shows the locations of all the following information symbols:

Symbol	Meaning
TX	Transmitting.
HI LO	Transmission power. High (HI) 25W or Low (LO) 1W.
WX	Weather channel.
WX ALT	Weather Alert. Alarm beeps will sound. VHF 7100US only.
BUSY	Receiver busy with an incoming signal.
PRI	Priority channel is selected.
D	Duplex operation. Otherwise, blank for Simplex operation.
LOCAL	Local calling is selected. Otherwise, blank for distance calling.
DSC	DSC capability is available. VHF 7100US and VHF 7100EU only.
	Incoming DSC call.
	Low Battery warning (activates at 10.5 V)
88	Channel selected.
USA INT CAN	Selected channel bank for VHF radio operations and regulations.
X	Channel is temporarily deleted from the ALL SCAN operation.
B A	Channel suffix, if applicable.
CH1 CH2 CH3	Shows which of the 3 favourite channels, if any, are selected. Otherwise blank.
ATIS	Enabled for use in European inland waterways. Otherwise blank. VHF 7100EU only.

A typical operational display is shown here.



The latitude and longitude of the vessel and the local time are shown.

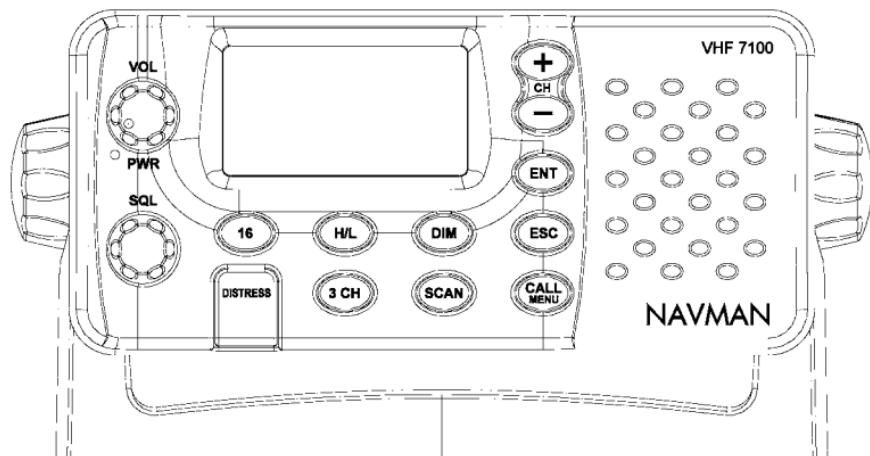
A transmission on Channel 16 is being made at high power using the International channel bank.

Channel 16 is set as the Priority channel. It is also set as favourite channel 1.

There is an incoming DSC call so the receiver is busy.

1-6 Basic Operation and Key Functions

All possible keys and their functions are listed. Note that some of the keys are not available depending on your Navman VHF radio model.



Key	Function
VOL/PWR	Volume and Power. Turn clockwise to power on. Continue to turn until a comfortable volume is reached. VOL/PWR will also adjust the settings of an external speaker, if connected.
SQL	Squelch or Threshold Level. Sets the threshold level for the minimum receiver signal. Turn fully counterclockwise until random noise is heard, then turn slowly clockwise until the random noise disappears. Make another 1/4 turn clockwise for best reception in open sea conditions. In areas of high noise (eg close to large cities) reception may improve if sensitivity is reduced. Either turn SQL slowly clockwise or use the LOCAL setting. See section 2.3.
16/9	Priority Channel. <i>VHF 7100US only. Also on the microphone.</i> Press to cancel all other modes and to tune into the priority channel. Press again to return to your original channel. The default is Channel 16. To make Channel 09 the priority channel, hold down 16/9 until a beep sounds and 09 is displayed.
16	Priority Channel. <i>VHF 7100EU and VHF 7000 only. Also on the microphone.</i> Press to cancel all other modes and to tune into the priority channel, Channel 16, on high power. Press again to return to your original channel.
WX	Weather Channel. <i>VHF 7100US and VHF 7000 only.</i> In USA and Canadian waters, press to hear the most recently selected weather station. The WX symbol is displayed on the LCD. Press + or - to change to a different weather channel. Press WX again to return to the most recent channel. If the weather alert mode (ALT) is ON and an alert tone of 1050Hz is broadcast from the weather station, it is picked up automatically and the alarm sounds. Press any key to hear the weather alert voice message.

H/L	Transmission Power. High (HI) 25W or Low (LO) 1W. Press to toggle between high or low transmission power for the entire channel bank. The HI or LO selection is shown on the LCD.
	Some channels allow only low power transmissions. Error beeps will sound if the power transmission setting is incorrect.
	Some channels allow only low power transmissions initially, but can be changed to high power by holding down H/L and PTT at the same time. See Appendix C for a complete listing of channel charts.
3CH	Three Favourite Channels. <i>Also on the microphone.</i> Press to toggle between your favourite channels. The CH1, CH2, or CH3 symbol appears on the LCD to show which favourite channel is selected. To scan only one of your favourite channels, press 3CH then immediately press and release SCAN. If you want to scan all three favourite channels, press 3CH then immediately press and hold SCAN. To add a favourite channel for the first time, select that channel then hold 3CH to store it in the CH1 location. Repeat the procedure to store two more favourite channels in the CH2 and CH3 locations respectively. If you try and add another favourite channel it will overwrite the existing CH3. CH1 and CH2 remain unless you delete them. To delete a favourite channel, select that channel then hold down 3CH until the CH1, CH2 or CH3 symbol disappears off the LCD.
UIC	Channel Bank. <i>7100US only.</i> Press to toggle between USA, International or Canadian channel banks. The selected channel bank is displayed on the LCD along with the last used channel. All the channel charts are shown in Appendix C.
U/I	Channel Bank. <i>7000 only.</i> Press to toggle between channel banks. <i>Note that the channel banks available are dependent upon your VHF radio model.</i> The selected channel bank is displayed on the LCD along with the last used channel. All the channel charts are shown in Appendix C.
DIM	Backlighting. <i>7100EU only.</i> Press to toggle between the backlighting settings. OFF will extinguish all the backlighting except for the DISTRESS key. (Otherwise, use the menu to change the backlight setting.)
SCAN	Scan. Press to scan between your current channel and the priority channel in DUAL or TRI WATCH mode. The weather channel is also scanned if the USA channel bank is selected and the weather alert mode (ALT) is ON. Hold down SCAN to enter ALL SCAN mode where the priority channel is checked every 1.5 seconds. When a signal is received, scanning stops at that channel and BUSY appears on the screen. If the signal ceases for more than 5 seconds, the scan restarts. Press ENT to temporarily skip over (lock out) an "always busy" channel when in ALL SCAN mode and resume the scan. An X is shown on the screen to designate a skipped channel. Note that it is not possible to skip over the priority channel. Press SCAN to stop at the current channel.

+ CH -	Channel Select. <i>Also on the microphone.</i> The current channel is shown on the screen in BIG digits with an appropriate designator suffix A or B in small letters below the channel number. Press + or - to step through the available channels one at a time, or hold down to scroll rapidly through all the available channels. See Appendix C for a listing of channel charts.
	Alphanumeric Entry. This key can also be used for menu selection and for alphanumeric entry. Press + or - to scroll the cursor up or down menu options when navigating menus.
	When editing an item containing only numbers, press - to count through the numbers or hold down to scroll rapidly.
	To enter a character, press + to step through the alphabet or hold down to scroll rapidly.
ENT	Enter. Use ENT when navigating menus, to confirm entries and edits.
ESC	Escape. Use ESC when navigating menus, to clear incorrect entries, to exit from a menu without saving changes, and to back up to the previous screen.
CALL/MENU	DSC Setup Menu and DSC Call Menu. <i>7100US and 7100EU only.</i> Press to enter the DSC Call Menu and make DSC calls. See Section 5. Hold down to enter the DSC Setup Menu and customize your radio. See Section 4.
MENU	Radio menu. <i>7000 only.</i> Press to enter the Radio Menu and customize your NAVMAN VHF radio. See Section 3.
DISTRESS	Send DSC Distress Call. <i>7100US & 7100EU only.</i> See Section 6.
PTT	Press To Talk. Press PTT to transmit at any time on an allowable channel. This automatically exits you from menu mode and stops scanning. You must release PTT to receive a signal. If PTT sticks, a built-in timer will automatically shut down a transmission after five minutes and sound the error beeps.

Section 2 - The Radio Menu (MENU)

2-1 Radio Menu Options (Menu)

The following options are available through MENU (or CALL/MENU):

BUDDY LIST	Maintain your buddy list. See Section 2-2.
LOCAL/DIST	Set radio sensitivity. See Section 2-3.
BACKLIGHT	Set backlight level. See Section 2-4.
CONTRAST	Set contrast level. See Section 2-4.
GPS/DATA	MANUAL SETTING Set position & UTC manually. See Section 2-5. Set local time and time format. See Section 2-5.
DSC SETUP	USER MMSID GROUP SETUP INDIV REPLY DSC FUNC ATIS MMSID ATIS FUNC LL REPLY DSC Setup Menu. <i>7100US and 7100EU only.</i> See Section 4. Make DSC calls. <i>7100US and 7100EU only.</i> See Section 5.
RADIO SETUP	CH NAME RING VOLUME BEEP VOLUME INTERNAL SP WATCH MODE WX ALERT COM PORT Radio Setup Menu. See Section 3.
GPS SIM	Turn the GPS Simulator on/off. See Section 2.6.
RESET	Reset factory settings. See Section 2.7.

Sections 1-3 and 1-4 explain how to navigate around the menu and enter, save and change data.

2-2 Maintain Your Buddy List (BUDDY LIST)

MENU SELECT
>BUDDY LIST
LOCAL/DIST
BACKLIGHT

VHF 7100US and VHF 7100EU only.

Use the Buddy List to store the names and associated MMSIDs of 20 favourite people. Names are stored in the order of entry, with the most recent entry shown first.

The following sections show how to use BUDDY LIST to add, edit, and delete entries on your buddy list.

Section 3 explains how to call a buddy.

2-2-1 Add an Entry

BUDDY LIST
>MANUAL NEW
ALEX
TOM

ENTER NAME

ENTER MMSID

ENTER NAME
BOB
ENTER MMSID
123456789

BOB
123456789
>STORE
CANCEL

1. Select BUDDY LIST. The cursor is at MANUAL NEW. Press ENT.
2. Enter the buddy name, one character at a time (this may be alphanumeric) then press ENT repeatedly until the cursor moves to the MMSID entry line.
4. Enter the MMSID associated with that buddy name (this must be numeric) then press ENT.
5. The new buddy name and MMSID are displayed. Press ENT to store the new entry, which is displayed at the top of your buddy list.

Note that when the BUDDY LIST is full (20 entries), you cannot make a new entry until you have deleted an existing entry.

2-2-2 Edit an Entry

BUDDY LIST
>MANUAL NEW
ALEX
TOM

ALEX
>EDIT
DELETE

EDIT NAME
ALEX
EDIT MMSID
112233445

ALEX
111223344
>STORE
CANCEL

1. Select BUDDY LIST. Press ENT to display the list of entries.
2. Scroll down (if required) to the incorrect entry and press ENT.
3. Select EDIT. The cursor is at the first character of the name.
4. Edit the buddy name or, to edit only the MMSID, press ENT repeatedly until the cursor moves to the MMSID line.
5. When you are finished, press ENT (repeatedly if necessary) to display the next screen.
6. Press ENT to store the changes. The buddy list is displayed again. If more changes are required, repeat Steps 2 thru 6. Otherwise, press ESC to exit.

2-2-3 Delete an Entry

BUDDY LIST
>MANUAL NEW
ALEX
TOM

BUDDY LIST
MANUAL NEW
ALEX
>TOM

TOM
EDIT
>DELETE

DELETE BUDDY
TOM
>YES
NO

1. Select BUDDY LIST. Press ENT to display the list of entries.
2. Scroll down (if required) to the entry you want to delete and press ENT.
3. Select DELETE then select YES.
4. The entry is deleted immediately and the buddy list is displayed again.

2-3 Local or Distance Sensitivity (LOCAL/DIST)

MENU SELECT
BUDDY LIST
>LOCAL/DIST
BACKLIGHT

Use LOCAL/DIST to improve the sensitivity of the receiver either locally (LOCAL) or over distances (DIST).

LOCAL is **not** recommended for use in open sea conditions. It is designed for use in areas of high radio noise; for example, close to cities.

See also SQL (Squelch Control) in Section 1.6.

2-3-1 Set Distance Sensitivity

SENSITIVITY
>DISTANT
LOCAL

1. Select LOCAL/DIST then select DIST.
2. Press ENT to activate the DIST setting. This disables local sensitivity and the menu is displayed again.

2-3-2 Set Local Sensitivity

SENSITIVITY
DISTANT
>LOCAL



1. Select LOCAL/DIST then scroll to LOCAL.
2. Press ENT to activate the LOCAL setting. This disables distance sensitivity and the menu is displayed again.

LOCAL is displayed on the LCD as a reminder that local sensitivity is selected.

2-4 Backlighting (BACKLIGHT) and Contrast (CONTRAST)

MENU SELECT
LOCAL/DIST
>BACKLIGHT
CONTRAST

Use BACKLIGHT to set the backlight levels for the LCD and the keypad at a comfortable level.

The microphone keypad backlighting is either ON or OFF.

Use CONTRAST to set the contrast level for the LCD.

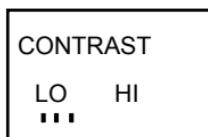
2-4-1 Set the Backlighting Level



1. Select BACKLIGHT.
2. Select a comfortable backlight level using + or - to change the setting.
3. Press ENT to enable the setting and return to the menu.

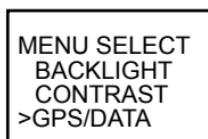
Note that the DISTRESS key backlighting cannot be switched off.

2.4.2 Set the Contrast Level



1. Select CONTRAST.
2. Select a comfortable contrast level using + or - to change the setting.
3. Press ENT to enable the setting and return to the menu.

2-5 GPS Data and Time (GPS/DATA)



If the boat has an operational GPS navigation receiver, the VHF radio automatically detects and updates the vessel position and the local time.

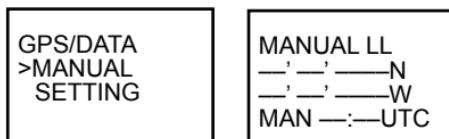
However, if the GPS navigation receiver is disconnected or absent, you can specify the vessel position and the local time manually, using the GPS/DATA option.

This information is important because it will be used if a DSC distress call is transmitted.

You can also enter the course (COG) and speed (SOG) and select GPS Alert and GPS Simulator options.

2-5-1 Manually Enter Position and UTC Time (MANUAL)

*Note that this function is available only if an operational GPS receiver is **not** connected.*



1. Select GPS/DATA, then MANUAL.
2. Enter the latitude, then the longitude, then the UTC.
3. Press ENT when all the information is correct.

The vessel's latitude and longitude are shown on the screen, with the UTC time. The prefix MAN indicates a manual entry. The manual entries are cancelled if a real GPS position is received.

2-5-2 Local Time (TIME OFFSET)

The local time can be set by entering the time offset between UTC and local time as follows.

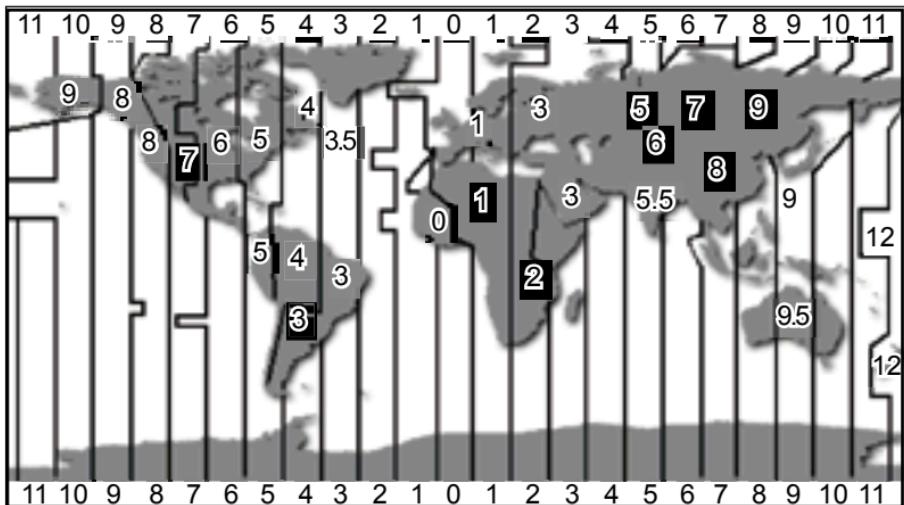
GPS/DATA
MANUAL
>SETTING

GPS/DATA
>TIME OFFSET
TIME FORMAT
TIME DISPLAY

TIME OFFSET
>+01:30
02:30PM LOC

1. Select GPS/DATA, then SETTING.
2. Select TIME OFFSET to enter the difference between UTC and local time. Half hour increments can be used with a maximum offset of ± 13 hours.

In this example, a difference of +1.5 hours has been entered and the local time is displayed with the suffix LOC.



2-5-3 Time Format Options (TIME FORMAT)

Time can be shown in 12 or 24 hour format.

GPS/DATA
MANUAL
>SETTING

GPS/DATA
TIME OFFSET
>TIME FORMAT
TIME DISPLAY

TIME FORMAT
>12 Hr
24 Hr
07:15AM LOC

1. Select GPS/DATA, then SETTING.
2. Select TIME FORMAT.
3. Select 12 Hr or 24 Hr as desired. In this example, 12 hour format has been selected and so the LCD shows the AM or PM suffix.

2-5-4 Time Display Options (TIME DISPLAY)

If you have entered the time manually as described in the previous sections, the time is always shown on the screen with the prefix M.

However, if the vessel position is being updated through a GPS navigation receiver, you can switch the time display on the screen ON or OFF as follows:

GPS/DATA
TIME OFFSET
TIME FORMAT
>TIME DISPLAY

TIME DISPLAY
ON
>OFF

1. Select GPS/DATA, then SETTING.
2. Select TIME DISPLAY.
3. Select ON (on) or OFF (off) as desired.
In this example, OFF has been selected and so the screen no longer shows the time.

If the time display is set ON, course and speed data are not displayed on the LCD (see section 2-5-6).

2-5-5 Position Display Options (LL display)

If you have entered the vessel position manually as described in the previous section, the vessel position is **always** shown on the screen with the suffix M.

However, if the time is being updated through a GPS navigation receiver, you can switch the vessel position display on the screen on or off as follows:

GPS/DATA
TIME FORMAT
TIME DISPLAY
>LL DISPLAY

LL DISPLAY
ON
>OFF

1. Select GPS/DATA, then SETTING.
2. Select LL DISPLAY.
3. Select ON (on) or OFF (off) as desired.
In this example, OFF has been selected and the screen no longer shows the vessel position.

2-5-6 Course & Speed Display Options (COG/SOG)

Use this option to display course over ground (COG) and speed over ground (SOG) data on the screen.

GPS/DATA
TIME DISPLAY
LL DISPLAY
>COG/SOG

COG/SOG
>ON
OFF

1. Select GPS/DATA, then SETTING.
2. Select COG/SOG.
3. Select ON (on) or OFF (off) as desired.
In this example, ON has been selected and so the screen shows the bearing and speed.

If GOG/SOG is set ON (on), the time is not displayed on the screen (see section 2-5-4).

2-5-7 GPS Alert Options (ALERT)

The GPS alert is usually set to ON (on) so that if the GPS navigation receiver is disconnected, the alarm sounds.

GPS/DATA
LL DISPLAY
COG/SOG
>GPS ALERT

GPS ALERT
>ON
OFF

1. Select GPS/DATA, then SETTING.
2. Select GPS ALERT.
3. Select ON (on) or OFF (off) as desired.

2-6 GPS Simulator (SIMULATOR)

The GPS Simulator is set to OFF whenever the radio is turned ON or whenever real GPS data is available through the COM port. However, if you want to test it, turn it on.

MENU SELECT
DSC SETUP
RADIO SETUP
>GPS SIM

1. Select GPS SIM, then select ON (on) or OFF (off) as desired.

Whenever the GPS Simulator is turned ON (on), simulated Speed Over Ground (SOG), Course Over Ground (COG), and LL position appear on the screen. This data is updated automatically during the simulation.

It is not possible to send a DSC transmission when in Simulator mode.

2-7 Reset to Factory Defaults (RESET)

Use this to return every setting to the factory defaults **except** all MMSID settings and the entries in your buddy list.

MENU SELECT
RADIO SETUP
GPS SIM
>RESET

RESET RADIO
ARE YOU SURE
>YES
NO

1. Select RESET. The radio asks for confirmation.
2. Select YES to reset the radio and return to the menu.

Section 3 - Radio Setup Menu (RADIO SETUP)

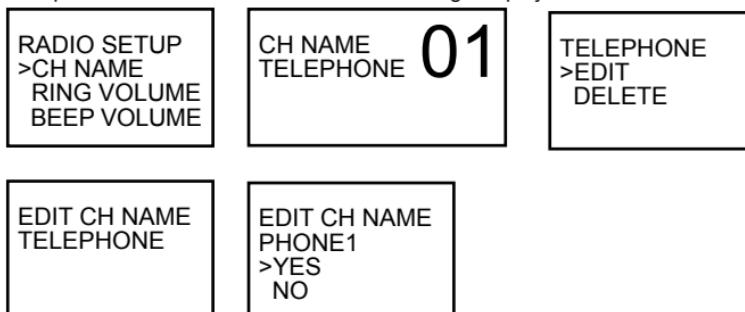
3-1 Radio Setup Menu (RADIO SETUP)

CH NAME	Edit or delete channel names. See <i>Section 3-2</i> .
RING VOLUME	Set the volume level of the incoming call notification beeps. See <i>section 3-3</i> .
BEEP VOLUME	Set the volume level of the beeps. See <i>section 3-3</i> .
INT SPEAKER	Switch ON/OFF (on/off) the radio's internal speakers. See <i>section 3-4</i> .
WATCH MODE	Selects the operation of Dual or Tri watch scanning. See <i>section 3-5</i> .
WX ALERT	(Selects if the WX Alert scanning mode is ON (on) or OFF (off). (VHF 7100US only.) See <i>section 3-6</i> .
COM PORT	Select NMEA protocol for communications between the VHF radio and any other instruments. See <i>section 3-7</i> .

Sections 1-3 and 1-4 explain how to navigate around the menu and enter, save and change data.

3-2 Channel Names (CH NAME)

The channel charts are listed in Appendix C with their default name tags. CH NAME gives you the option to edit or delete the channel name tags displayed on the screen.



1. Select RADIO SETUP, then CH NAME.
2. Use + or - to step through the channels with their name tags until you see the channel name tag you want to change, then press ENT. In this example, the channel name TELEPHONE associated with channel 01 is being changed to PHONE1.
3. Select EDIT and press ENT to edit the existing name tag. Input the new name over the existing name. It can be a maximum of 12 characters.

To delete the channel name, select DELETE and press ENT.

4. Press ENT (repeatedly if necessary) to display the YES/NO confirmation.
5. Press ENT to confirm the new channel name tag or the deletion, then press ESC to return to the menu.

3-3 RING & BEEP Volume (RING VOLUME)

& (BEEP VOLUME)

Set the volume level of the incoming signal beeps (RING VOLUME) and/or the error and warning beeps (BEEP VOLUME) to HIGH (high) or LOW (low) as follows:

RADIO SETUP
CH NAME
>RING VOLUME
BEEP VOLUME

RING VOLUME
>HIGH
LOW

BEEP VOLUME
>HIGH
LOW
OFF

1. Select RADIO SETUP, then RING VOLUME or BEEP VOLUME as appropriate.
2. Select a HIGH or LOW volume. (It is possible to turn the beeps off completely by selecting BEEP VOLUME then OFF.)
3. Press ENT to enable the new volume setting and return to the menu.

3-4 Internal Speaker Connections (INT SPEAKER)

Switch the radio's internal speaker ON (on) or OFF (off). The external speaker is always ON (on) if a speaker is plugged into the external speaker jack.

RADIO SETUP
RING VOLUME
BEEP VOLUME
>INT SPEAKER

INT SPEAKER
>ON
OFF

1. Select RADIO SETUP, then INT SPEAKER.
2. Select ON (on) or OFF (off) then press ENT to enable the setting and return to the menu.

3-5 Set the Priority Channel (WATCH MODE)

If you have a VHF7000 or a VHF 7100EU, watch mode is similar to a dual watch, scanning between the priority channel and the working channel. CH16 is the priority channel.

However, if you have a VHF 7100US and are operating on USA or Canadian channel banks, you can set the priority channel to cover both CH16 and CH09 as well as the working channel, as follows:

RADIO SETUP
BEEP VOLUME
INT SPEAKER
>WATCH MODE

WATCH MODE
>ONLY 16CH
16CH+9CH

1. Select RADIO SETUP, then WATCH MODE.
2. Select ONLY 16CH for dual watch mode, or 16CH+9CH for tri watch mode.

3-6 Weather Alert (Wx ALERT)

VHF 7100US only.

The NOAA provides several weather forecast channels on USA and Canadian channel banks. If severe weather such as storms or hurricanes are forecast, the NOAA broadcasts a weather alert on 1050 Hz. You can set up the radio to pick up weather alerts, as follows:

RADIO SETUP
INT SPEAKER
WATCH MODE
>WX ALERT

WX ALERT
ON
>OFF

1. Select RADIO SETUP, then WX ALERT.
2. Select ON (on) or OFF (off) then press ENT to enable the setting and return to the menu.

When a weather alert is broadcast, the alarm will sound. Press any key to hear the weather alert voice message.

3-7 NMEA protocol (COM PORT)

The radio can be added to a group of instruments using NMEA protocol.

RADIO SETUP
WATCH MODE
WX ALERT
>COM PORT

NMEA
CHECKSUM
>ON
OFF

1. Select RADIO SETUP, then COM PORT.
2. Select CHECKSUM ON (on) or OFF (off) then press ENT to enable the setting and return to the menu.

CHECKSUM ON is the usual setting.

Section 4 - DSC Setup Menu (DSC SETUP)

These DSC facilities are available only on the 7100US and 7100EU and a valid user MMSID must be entered to access the DSC functions.

4-1 DSC Setup - Menu Options

The following options are available:

USER MMSID	Enter your user MMSID. See section 4.2. (If you do not have a user MMSID, see Appendix D.)
GROUP SETUP	Enter or change the name and/or details of a group. See section 4.3.
INDIV REPLY	Choose an automatic or manual response to calls (VHF 7100US only). See section 4.4.
ATIS MMSID	Enter or change your ATIS MMSID (VHF 7100EU only). See section 4.5.
ATIS FUNC	Enable/disable the ATIS function (VHF 7100EU only). See section 4.5.
DSC FUNC	Turn the DSC operation ON/OFF (on/off). See section 4.6.
LL REPLY	Select the type of response to an LL polling request. See section 4.7.

Sections 1.3 and 1.4 explain how to navigate around the menu and enter, save and change data.

4-2 Enter Your USER MMSID (USER MMSID)

This is a **once-only** operation. You must enter your user MMSID before you can access the DSC functions.

DSC SETUP >USER MMSID GROUP SETUP INDIV REPLY	INPUT USER MMSID _____	187654321 MMSID >STORE CANCEL	USER MMSID INPUT AGAIN _____
--	------------------------------	--	------------------------------------

You can display and read your user MMSID at any time, but you get only one opportunity to enter your user MMSID.

1. Select DSC SETUP, then USER MMSID.
2. If this is the **first time** that you are entering your user MMSID, a dashed line appears.

Enter your user MMSID along the dashed line. Press ENT to confirm each correct entry and to move to the next digit.

If you make an error, press - until < appears, then press ENT to backup and correct the entry.

3. Press ENT to store your user MMSID.
4. Enter your user MMSID again as a password check, then press ENT to permanently store the user MMSID and return to the menu.

You can view your stored user MMSID at anytime by selecting USER MMSID in the main menu.

4-3 Maintain Your Groups (GROUP SETUP)

Use GROUP SETUP to create, edit, or delete 1, 2, or 3 groups of frequently called people stored in alphanumeric order. A group MMSID **always** starts with 0.

4-3-1 Create a Group (GROUP SETUP)

DSC SETUP USER MMSID >GROUP SETUP INDIV REPLY	GROUP SETUP >MANUAL NEW 00000000	GROUP NAME _____ GROUP MMSID 0_____	FISHER1 012345678 >STORE CANCEL
--	--	--	--

1. Select DSC SETUP, then GROUP SETUP.
2. If this is the **first time** that you are entering a group name, a line of nine zeros appears. Otherwise, any existing group names are displayed. Press ENT to display the input screen.
3. Enter the group name along the dashed line. It can be alphanumeric. Press ENT to confirm each correct entry and to move to the next digit. When you have finished, press ENT repeatedly until the cursor moves to the MMSID line.
If you make an error, press - until < appears, then press ENT to backup and correct the entry.
4. Enter the group MMSID. (Note that the first number is always 0.) Press ENT.
5. The group name and group MMSID are shown in a confirmation screen. Press ENT to store the details and return to the GROUP SETUP screen.

4-3-2 Edit Group Name Details

GROUP SETUP MANUAL NEW >FISHER1 FRIENDS1	FISHER1 >EDIT DELETE	EDIT NAME FISHER1 EDIT MMSID 012345678	FISHER2 012345678 >STORE CANCEL
---	----------------------------	---	--

1. Select DSC SETUP, then GROUP SETUP. The existing group names are displayed. Press + or - to scroll to the incorrect entry then press ENT.
2. Press ENT to edit. The group name details are displayed, with the cursor at the first character of the name.
3. Edit the buddy name or, to edit only the MMSID, press ENT repeatedly until the cursor moves to the MMSID line.
4. When you are finished, press ENT (repeatedly if necessary) to display the next screen.
5. Press ENT to store the changes and return to the GROUP SETUP screen.

4-3-3 Delete a Group

GROUP SETUP
MANUAL NEW
>FISHER2
FRIENDS1

FISHER2
EDIT
>DELETE

DELETE
GROUP
FISHER2
>YES
NO

1. Select DSC SETUP, then GROUP SETUP. The existing group names are displayed.
2. Press + or - to scroll to the incorrect entry then press ENT.
3. Select DELETE and press ENT. The radio asks for confirmation.
4. Press ENT to delete the group and return to the GROUP SETUP screen.

4-4 Response to Individual Calls (INDIV REPLY)

VHF 7100US only. You can respond to incoming individual calls with an automatic response or with a manual response.

An automatic response sends an acknowledgement and then sets the request link channel, ready for a conversation.

A manual response asks if you want to acknowledge the call, and then asks if you want to converse with the caller.

DSC SETUP
USER MMSID
GROUP SETUP
>INDIV REPLY

INDIV REPLY
>AUTO
MANUAL

1. Select DSC SETUP, then INDIV REPLY.
2. Select AUTO for an automatic response, or MANUAL for a manual response.

3. Press ENT to confirm your choice and return to the menu.

4-5 ATIS MMSID & ATIS Functionality

enter your ATIS MMSID to access ATIS functionality if you are navigating inland waterways within Europe.

ATIS sends a digital message anytime that you release the PTT key. Inland waterways rules require 1W Tx power on Channels 06, 08, 10, 11, 12, 13, 14, 15, 17, 71, 72, 74, and 77.

4-5-1 Enter or Edit YOUR ATIS MMSID

DSC SETUP
GROUP SETUP
INDIV REPLY
>ATIS MMSID

INPUT ATIS
MMSID
9_____

INPUT ATIS
MMSID
>STORE
CANCEL

INPUT AGAIN
ATIS MMSID
9_____

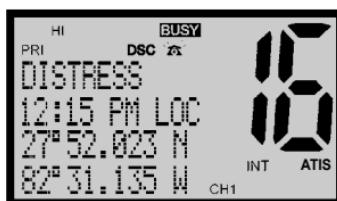
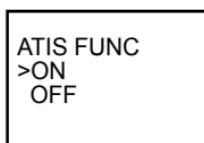
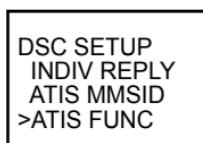
ATIS MMSID
923456789
>STORE
CANCEL

VHF 7100EU only. An ATIS MMSID always starts with the number 9. To enter or edit your ATIS MMSID:

1. Select DSC SETUP, then ATIS MMSID.
2. If this is the **first time** that you are entering your ATIS MMSID, a dashed line appears. Enter your ATIS MMSID along the dashed line. The first number is always 9. Press ENT to confirm each correct entry and to move to the next digit.
If you make an error, press - until < appears, then press ENT to backup and correct the entry.
If you are editing an existing ATIS MMSID, this will be displayed. Make the required changes.
3. Press ENT to store your user MMSID.
4. Enter your ATIS MMSID again as a password check, then press ENT to permanently store the ATIS MMSID and return to the menu.
You can view your stored ATIS MMSID at anytime by selecting ATIS MMSID in the main menu.

4-5-2 Enable ATIS Functionality (ATIS FUNC)

VHF 7100EU only. ATIS functionality will operate only after the ATIS MMSID has been entered (see previous section).



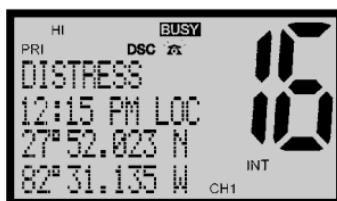
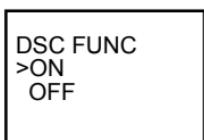
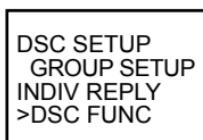
1. Select DSC SETUP, then ATIS FUNC.
2. Select ON (on) to enable the ATIS functionality and automatically disable DSC functionality. The ATIS annunciator appears on the screen.

It is not possible to have both ATIS ON (on) and DSC ON (on) simultaneously. When you enable one, the other will turn OFF (off). If DSC and ATIS are both OFF (off), DSC will have to be switched ON (on) for normal DSC operation.

There are two annunciators in the screen to show you the current mode: if the DSC annunciator is shown, DSC is operational, if the ATIS annunciator is shown, ATIS is operational.

4-6 DSC functionality options (DSC FUNC)

DSC functionality can be disabled but this is not recommended.



1. Select DSC SETUP, then DSC FUNC.
2. Press ENT to select ON and to operate the DSC functionality. This will automatically disable ATIS functionality. The DSC annunciator appears on the screen.

It is not possible to have both ATIS ON (on) and DSC ON (on) simultaneously. When you enable one, the other will turn OFF (off). If DSC and ATIS are both OFF (off), DSC will have to be switched ON (on) for normal DSC operation.

There are two annunciators in the screen to show you the current mode: if the DSC annunciator is shown, DSC is operational. If the ATIS annunciator is shown, ATIS is operational.

4-7 Response Type to LL Polling Calls (LL REPLY)

You can set up the radio to respond to an LL polling request in one of three ways:

AUTO	automatically replies to any incoming LL polling requests from any of your buddies.
MANUAL	choose whether to reply automatically or manually to any incoming buddy polling requests.
OFF	ignores all incoming buddy LL polling requests.

DSC SETUP
INDIV REPLY
DSC FUNC
>LL REPLY

LL REPLY
>AUTO
MANUAL
OFF

1. Select DSC SETUP, then LL REPLY.
2. Select your response and press ENT to confirm and return to the menu.

Section 5 - Sending and Receiving DSC Calls

These DSC facilities are available only on the VHF 7100US and VHF 7100EU models, and a valid user MMSID must have been entered to access the DSC functions.

5-1 WHAT IS DSC?

DSC (Digital Selective Calling) is a semi-automated method of establishing VHF, MF, and HF radio calls. It has been designated as an international standard by the IMO (International Maritime Organization) and is part of the GMDSS (Global Maritime Distress and Safety System).

Currently, you are required to monitor Distress Channel 16, but DSC will eventually replace listening watches on distress frequencies and will be used to broadcast routine and urgent maritime safety information.

DSC enables you to send and receive calls from any vessel or coast station that is equipped with DSC functionality, and within geographic range. Calls can be categorised as distress, urgency, safety, or routine, and DSC selects a working channel automatically.

5-2 Sending DSC calls

1. Press CALL MENU to show the types of DSC call that can be made.

>INDIVIDUAL
INDIV ACK
LAST
GROUP

Note that only four DSC call types can be shown at any one time on the screen.

2. Press + or - to scroll up and down the DSC call types until the cursor is positioned at the desired option. Then press ENT. The DSC call types are:

INDIVIDUAL	Make a routine call or acknowledgement to a new caller or a buddy. See Section 5-2-1, 5-2-2, and 5-2-3.
LAST CALL	Show the details of the most recent incoming call. See Section 5-2-4.
GROUP	Make a call to one of your three groups. See Section 5-2-5.
ALL SHIPS	Make an All Ships call. See Section 5-2-6.
CALL LOG	Show the details of the 20 most recent incoming calls. See Section 5-2-7.
DIST LOG	Show the details of the 10 most recent distress calls. See Section 5-2-8.
LL REQUEST	Request the LL position of a buddy. See Section 5-2-9.

5-2-1 Make a Routine Call (Individual)

DSC CALL
>INDIVIDUAL
LAST CALL
GROUP

INDIVIDUAL
>MANUAL NEW
BOBBY D
REBECCA T

MANUAL MMSID
0_____

012345678
INDIVIDUAL
ROUTINE
>SET CHANNEL

012345678
INDIVIDUAL
ROUTINE
>SEND?

12345678
INDIVIDUAL
ROUTINE
CALLING...

012345678
INDIVIDUAL
ROUTINE
WAITING ACK

INDIV ACK
012345678
PRESS PTT
ESC -> EXIT

You can call any other person that has another DSC equipped radio.

1. Press CALL/MENU to enter DSC mode, then select INDIVIDUAL. This allows you to call another person.
2. Select MANUAL NEW to call a person that is not in your buddy list, otherwise select the name of your buddy. Press ENT.
If you selected MANUAL NEW, you need to enter the user MMSID and then press ENT.
3. Select the working channel and press ENT. (Note: Duplex channels cannot usually be called and are automatically eliminated from the suggested call list. If the call is to a Coast Station, the radio will recognize this and select the correct channel.)
4. The radio summarizes the call details and asks for confirmation to send the call (SEND?). Press ENT to send the call. The radio goes to CH70 and the Tx annunciator is displayed on the screen while the DSC call is being sent.
5. If the call is acknowledged (ACK), press PTT to talk. If there is no reply, retry making the call. See Section 5-2-2.

5-2-2 Retrying a Routine Call

VHF7100
SEND AGAIN?
>YES
CANCEL

1. If there is no reply to your call after one minute (UNABLE TO ACKNOWLEDGE) the radio asks if you want to retry the call (SEND AGAIN?).
2. Select YES and press ENT to retry the call.

The radio will repeat this cycle twice. If the call still cannot be placed, the radio returns to normal operation.

5-2-3 Acknowledgement of an Individual Incoming Call (INDIV)

RCV: INDIV
012345678
ENTER -> ACK
ESC -> EXIT

The VHF 7100EU requires the operator to manually send an acknowledgement to the requesting radio.

Press ENT to send an acknowledgement or ESC to cancel.

The VHF 7100US will automatically send an acknowledgement to the requesting radio within 10 seconds of receiving the call.

5-2-4 Recall the Most Recent Incoming Call (LAST)

DSC CALL
INDIVIDUAL
>LAST CALL
GROUP

VHF7100 USA
INDIVIDUAL
ROUTINE
10:22AM LOC

VHF7100 USA
INDIVIDUAL
ROUTINE
>SET CHANNEL

VHF7100 USA
INDIVIDUAL
ROUTINE
>SEND?

This facility is useful and used frequently.

1. Press CALL/MENU to enter DSC mode. LAST CALL is automatically selected. Press ENT to display the contact details of the most recent incoming call.
2. Select the working channel and press ENT. (Note: Duplex channels cannot usually be called and are automatically eliminated from the suggested call list. If the call is to a Coast Station, the radio will recognize this and select the correct channel.)
3. The radio summarizes the call details and asks for confirmation to send the call (SEND?). Press ENT to send the call, and continue as explained in Section 5-2-1.

5-2-5 Call a Group (GROUP)

DSC CALL
INDIVIDUAL
LAST CALL
>GROUP

SELECT GROUP
>RD GROUP
GROUP #2
GROUP#3

RD GROUP
055554444
ROUTINE
>SET CHANNEL

VHF7100 USA
INDIVIDUAL
ROUTINE
>SEND?

1. Press CALL MENU to enter DSC mode, then select GROUP. The radio displays the names of your groups.
2. Select the group that you want to call (the Group MMSID must be set before making the call). Then set the channel and continue as explained in Section 5-2-1.

5-2-6 CALL ALL SHIPS (ALL SHIPS)

DSC CALL
LAST CALL
GROUP
>ALL SHIPS

ALL SHIPS
>URGENCY
SAFETY
ROUTINE

ALL SHIPS
URGENCY
>YES
NO

The ALL SHIPS ROUTINE call option is shown only on the VHF 7100US.

1. Press CALL MENU to enter DSC mode, then select ALL SHIPS.
2. The priority is set automatically to URGENCY. However, you can select one of the following call priorities:

URGENCY	for use when a serious situation or problem arises that could lead to a distress situation
SAFETY	to send safety information to all other vessels in range;
ROUTINE	routine call (VHS 7100US only).
3. CH16 is selected automatically as the working channel and the radio asks for confirmation of the ALL SHIPS call. Press ENT to select YES and send the call. Continue as explained in Section 5-2-1.

5-2-7 Call using the Call Log (CALL LOG)

DSC CALL
GROUP
ALL SHIPS
>CALL LOG

11 VHF7100
INDIVIDUAL
ROUTINE
10:45PM LOC

VHF7100
>CALL BACK
DELETE

VHF7100
INDIVIDUAL
ROUTINE
>SET CHANNEL

VHF7100
INDIVIDUAL
ROUTINE
>SEND?

The Call Log contains the contact details for the 20 most recent incoming calls, so that you call any of them again quickly.

1. Press CALL MENU to enter DSC mode, then select CALL LOG.

Scroll down to the desired contact details.

The radio displays the contact details for the most recent incoming call as the first entry (01) in the call log. In the example, the contact details for the 11th most recent call are displayed.

2. Press ENT to confirm the call back, then set the working channel and press ENT to send the call. Continue as explained in Section 5-2-1.

5.2.8 Call using the Distress Log (DIST LOG)

DSC CALL
ALL SHIPS
CALL LOG
>DIST LOG

02 10:03 UTC
VHF7100 (xxx)
82°50'. N
27°45'. W

DISTRESS
RELAY
PIRACY
987654321

VHF7100
>CALL BACK
DELETE

VHF7100
INDIVIDUAL
ROUTINE
>SET CHANNEL

VHF7100
INDIVIDUAL
ROUTINE
>SEND?

The Distress Log contains the Distress Log data for the 10 most recent relayed Distress Calls, so that you can call any of them quickly. Always try to make voice contact on CH16 first, as follows:

1. Press CALL/MENU to enter DSC mode, then select DIST LOG.
2. The most recently received Distress Call is the first entry (01) in the Distress Log. Select the entry that you want to call and press ENT.

The details are displayed over two screens that alternate every 1.5 seconds; the first screen shows the location and name or MMSID of the vessel in distress, the second screen shows the nature of the emergency (if specified) and the MMSID of the vessel that relayed the Distress Call.

3. Set the channel and continue as explained in Section 5-2-1.

5-2-9 Request the LL Position of a Buddy (LL REQUEST)

DSC CALL
CALL LOG
DIST LOG
>LL REQUEST

LL REQUEST
>SAM
VHF7100
BUDDY #3

SAM
LL REQUEST
>SEND?

SAM
LL REQUEST
CALLING...

channel name
SAM
LL REQUEST
AWAITING ACK

1. Press CALL/MENU to enter DSC mode, then select LL REQUEST.
2. Select the buddy whose LL position you want to request then press ENT to send the request. (See Section 5-3-5 for the acknowledgement.)
3. The working channel name is displayed while the radio waits for an acknowledgement from your buddy. If there is no reply after 1 minute the radio asks if you want to retry. Continue as explained in Section 5-2-2.

5-3 Receiving DSC Calls

Several types of DSC calls can be received from vessels within range at various priority levels:

DISTRESS	See Section 6.
ALL SHIPS	Urgency or Safety priority (see Section 5-3-1)
INDIVIDUAL	Urgency, Safety, or Routine priority (see Section 5-3-2)
GROUP	Routine priority only (see Section 5-3-3)
GEOGRAPHIC	Routine priority only (see Section 5-3-4)
POLLED POSITION	Routine priority only (see Section 5-3-5)

In addition to the audible alert, the telephone icon will flash on the screen.

5-3-1 Receiving an All Ships Call (ALL SHIPS)

RCV: ALL SHIP
priority
VHF7100
ESC -> EXIT

- When you receive notification of an ALL SHIP call, press any key to cancel the alert. The radio automatically selects CH16.

The priority level and the user MMSID are displayed on the screen. If the radio recognises the user MMSID as one of your buddies, the buddy's name is displayed in place of the user MMSID.

- No acknowledgement is required. Press PTT to initiate voice contact on CH16 and then switch to a working channel.

The call data is stored in the Call Log (see Section 5-2-7).

5-3-2 Receiving an Individual Call (INDIV)

RCV: INDIV
VHF7100
ENTER -> ACK
ESC -> EXIT

INDIV ACK
VHF7100
PRESS PTT
ESC -> EXIT

- When you receive notification of an INDIV call, press any key to cancel the alert. The radio automatically selects the channel designated in the incoming call. INDIV calls are almost always Routine priority.

If the radio recognises the user MMSID as one of your buddies, the buddy's name is displayed in place of the user MMSID.

- The VHF 7100US responds automatically but the VHF 7100EU prompts you to press ENT to acknowledge the incoming call.
- The caller should respond to your acknowledgement by making voice contact on the designated channel. If this does not happen, you can press PTT to initiate voice contact instead.

The call data is stored in the Call Log (see Section 5-2-7).

5-3-3 Receiving a Group Call (GROUP)

RCV: GROUP
GP: RD GROUP
VHF7100
ROUTINE

- When you receive notification of a GROUP call, press any key to cancel the alert. The radio automatically selects the channel designated in the incoming call.

The priority level is always routine, and the group is identified on the screen. The group will be one of the three groups of frequently called people that you set up earlier (see Section 4-3).

- You do not need to send an acknowledgement. If desired, press PTT to initiate voice contact on the designated channel.

The call data is stored in the Call Log (see Section 5-2-7).

5-3-4 Receiving a Geographic Call (GEOGRAPH)

RCV: GEOGRAPH
VHF7100
10:34 UTC
ESC -> EXIT

A geographic call is received by vessels within a specific geographic boundary area.

- When you receive notification of a GEOGRAPH call, press any key to cancel the alert. The radio automatically selects the channel designated in the incoming call.

The time and the user MMSID or name are displayed on the screen. If the radio recognises the user MMSID as one of your buddies, the buddy's name is displayed in place of the user MMSID.

- Monitor the working channel for an announcement from the calling vessel.

5-3-5 Receiving a Polled Position Call (POSITION)

RCV: POSITION
SAM
82°50. 003'N
27°45.543'W

1. When you receive GPS position data from a buddy in response to your LL request (see Section 5-2-9), you are recommended to make a written note of the position, especially if it is a good fishing position.
If enhanced LL position information is available from your buddy, this is shown on the screen until the screen display changes.

Section 6 - Distress Calls

This DSC function is available only on the 7100US and 7100EU models, and a valid user MMSID must have been entered to access this DSC function.

6-1 Sending a Distress Call

DISTRESS CALL
>PIRACY
OVER BOARD
EPRIB

DISTRESS CALL
>PIRACY
HOLD DISTRESS
2 SECONDS..

DISTRESS CALL
SENT! WAIT..
PRESS ESC
TO CANCEL...

1. Open the red cover labelled DISTRESS.

If time is available to specify the nature of the distress, go to step 2. Otherwise, go directly to step 3.

2. Press the DISTRESS key to display the following categories. Scroll to the category that describes your situation, then press ENT:

UNDEFINED

FIRE

FLOODING

COLLISION

GROUNDING

LISTING

SINKING

ADRIFT

ABANDONING

PIRACY

OVER BOARD

EPRIB

3. Hold down the DISTRESS key for about 3 seconds, until you see the distress call sent message (DISTRESS CALL SENT!) on the screen. The whole display starts to flash and beep loudly.

The distress call repeats five times continuously. It then repeats randomly every 3.5 to 4.5 minutes until a distress acknowledgement (DISTRESS ACK) is received from a search and rescue authority or until you cancel the distress call manually.

The radio selects CH16 automatically so that you can hear any incoming voice contacts from search and rescue authorities or other vessels within range.

Press ESC if you need to cancel the distress call. This is the only key that operates in distress mode.

6-2 Receiving a Distress Call (DISTRESS!)

RCV: DISTRESS
123456789
FLOODING
ESC -> EXIT

RCV: DISTRESS
10:34 UTC
82°50.003'N
27°45.543'W

1. An alert sounds when a distress call (DISTRESS!) is received. Press any key to cancel the alert. You do not need to send an acknowledgement.

2. The radio automatically selects CH16 and displays the details of the distress call on the screen. Press PTT to establish voice contact.

The details are displayed over two screens that alternate every 1.5 seconds; the first screen shows the user MMSID and nature of the emergency (if specified), the second screen shows the time and the location (if specified). If the location and time are not specified, these are replaced with sequences of 9s and 8s respectively.

The VHF7100 is capable of receiving enhanced LL position data if the vessel transmitting the Distress Call is sending this. This provides the position of the distressed vessel to within 20 m (60ft).

6-3 Distress Acknowledgement (DISTRESS ACK) or Relay

RCV: DISTRESS
RELAY
123456789
ESC -> EXIT

An alert sounds when a Distress Relay (DISTRESS RELAY) is received. Press any key to cancel the alert.

Try to make voice contact with the calling vessel. Maintain a listening watch on CH16 and standby to lend assistance.

For a Distress Acknowledgement (DISTRESS ACK) sent from the Coast Guard, your radio automatically cancels Distress Mode transmissions and CH16 appears. Press PTT to establish voice contact with the Coast Guard.

The Coast Guard is the only agency allowed to send a Distress Acknowledgement (DISTRESS ACK).

Appendix A - Technical Specifications

Navman VHF 7000

GENERAL

Power Supply:	13.6 V DC.
Current drain:	
Transmit	6A at 25W Tx / 1.5A at 1W Tx
Receive	Less than 250 mA in standby
Useable channels:	International, USA (country specific)
Mode:	16K0G3E (FM)

PHYSICAL

LCD display (viewing):	41(H) x 53(W) mm FSTN 4 x 12 character
Contrast and Dimming control:	Yes
Antenna connector:	SO-239 (50 ohm)
Temperature Range:	-15°C to +50°C
Waterproof:	JIS-7
Dimensions:	161(W) x 75(H) x 147(D) mm - without bracket
Weight:	1.29 kg (2.8lbs) - without microphone
Frequency stability:	+/- 10ppm
Frequency control:	PLL
GPS/NMEA input:	Yes
Comm. port:	4800 baud NMEA
DSC:	No

FEATURES

Flush Mount kit and dust cover:	Yes
Local/Distant control:	Yes
Position polling:	No
GPS Position & Data:	Yes
Call logs:	Yes - 20 individual and 10 distress
DSC (USCG SC101 and Class D):	No
Channel Naming:	Yes
Dual Watch, Favourite channel scan, All scan:	Yes
User programmable MMSID:	No
MMSID and NAME directory:	No

TRANSMITTER

Frequency:	156.025 - 157.425MHz
Output power:	25 W / 1 W selectable
Transmitter protection:	Open / short circuit of antenna

Max Freq deviation: +/- 5kHz
Spurious & harmonics: 80dB@25W, 60dB@1W
Modulation distortion: Less than 4%@ 1kHz for a +/-3kHz deviation

RECEIVER

Frequency: 156.025 - 163.275MHz
12dB SINAD sensitivity: 0.25uV (distant) / 2.5uV (local)
20db SINAD sensitivity: 0.35uV
Adjacent CH selectivity: more than 70db
Spurious response: more than 70db
Intermodulation
Rejection ratio: more than 68db
Residual Noise level: more than -40db unsquelched
Audio output power: 2W (with 8 ohm at 10% distortion)
4W with 4 ohm external speaker
Compass safe distance: 0.5m (1.5')

Specifications are subject to change without notice.

Navman VHF 7100

GENERAL

Power Supply: 13.6V DC.
Current drain:
Transmit 6 A at 25 W Tx / 1.5A at 1W Tx
Receive Less than 250mA in standby
Useable channels: International, USA, Canada, Weather (country specific)
Mode: 16K0G3E (FM) / 16K0G2B (DSC)

PHYSICAL

LCD display (viewing): 41(H) x 53(W) mm
FSTN 4 x 12 character
Contrast and
Dimming control: Yes
Antenna connector: SO-239 (50 ohm)
Temperature Range: -15°C to +50°C
Waterproof: JIS-7
Dimensions: 161(W) x 75(H) x 147(D) mm - without bracket
Weight: 1.29 kg (2.8 lbs) - without microphone
Frequency stability: +/- 10ppm
Frequency control: PLL
GPS/NMEA input: Yes
Comm. port: 4800 baud NMEA
DSC: Yes

FEATURES

Flush Mount kit and
dust cover: Yes
Local/Distant control: Yes

Position polling: Yes
Group Call: Yes
Call logs: Yes - 20 individual and 10 distress
DSC (USCG SC101 and Class D): Yes (VHS 7100US)
Channel Naming: Yes
Tri watch, Favourite channel scan, All scan: Yes
User programmable
MMSID: Yes
MMSID and NAME directory: Yes - 20 numbers & group

TRANSMITTER

Frequency: 156.025 - 157.425MHz
Output power: 25 W / 1 W selectable
Transmitter protection: Open / short circuit of antenna
Max Freq deviation: +/- 5kHz
Spurious & harmonics: better than 2.5 μ W
Modulation distortion: Less than 4%@ 1kHz for a +/-3kHz deviation

RECEIVER

Frequency: 156.025 - 163.275 MHz
12dB SINAD sensitivity: 0.25uV (distant) / 2.5uV (local)
20db SINAD sensitivity: 0.35uV
Adjacent CH selectivity: more than 65db (VHS 7100US)
more than 70 db (VHS 7100EU)
Spurious response: more than 65 db (VHS 7100US)
more than 70 db (VHS 7100EU)

Intermodulation

Rejection ratio: more than 65 db (VHS 7100US)
more than 68 db (VHS 7100EU)
Residual Noise level: more than -40db unsquelched
Audio output power: 2 W (with 8 ohm at 10% distortion)
4 W with 4 ohm external speaker
Compass safe distance: 0.5 m (1.5')

Specifications are subject to change without notice.

Appendix B - Troubleshooting

1. The transceiver will not power up.

A fuse may have blown OR there is no voltage getting to the transceiver.

- a) Check the power cable for cuts, breaks, or squashed sections.
- b) After checking the wiring, replace the 7 Amp fuse (2 spare fuses are supplied).
- c) Check the battery voltage. This must be greater than 10.5V.

2. The transceiver blows the fuse when the power is switched on.

The power wires may have been reversed.

- a) Check that the red wire is connected to the positive battery terminal, and the black wire is connected to the negative battery terminal.

3. The speaker makes popping or whining noises when the engine is running.

Electrical noise may be interfering with the transceiver.

- a) Re-route the power cables away from the engine.
- b) Add a noise suppressor to the power cable.
- c) Use resistive spark plug wires and/or use an alternator whine filter.

4. No sound from the external speaker.

- a) Check that the external speaker cable is physically connected.
- b) Check the soldering of the external speaker cable.

5. Transmissions are always on low power, even when high (HI) power is selected.

The antenna may be faulty.

- a) Test the transceiver with a different antenna.
- b) Have the antenna checked out.

6. Battery symbol is displayed.

The power supply is too low or too high.

- a) Check the battery voltage. This should be at least $10.5V \pm 0.5V$ DC.
- b) Check the alternator on the vessel.

7. No position information is displayed.

The GPS cable may be faulty or the GPS setting may be incorrect.

- a) Check that the GPS cable is physically connected.
- b) Check the polarity of the GPS cable.
- c) Check the baud rate setting of the GPS if applicable. The baud rate setting should be 4800 and parity should be set to NONE.

Appendix C - VHF Marine Channel Charts

C.1 International Channel Chart

CH	SEND (MHz)	RECEIVE (MHz)	TRAFFIC TYPE	SHIP TO SHIP	SHIP TO SHORE	NAME TAG
01	156.050	160.650	Public Correspondence, Duplex	No	Yes	TELEPHONE
02	156.100	160.700	Public Correspondence, Duplex	No	Yes	TELEPHONE
03	156.150	160.750	Public Correspondence, Duplex	No	Yes	TELEPHONE
04	156.200	160.800	Port Operations, Duplex	No	Yes	PORT OPS
05	156.250	160.850	Port Operations, Selected VTS Areas	No	Yes	PORT OPS/VTS
06	156.300	156.300	Inter-ship Safety	Yes	No	SAFETY
07	156.350	160.950	Port Operations, Duplex	No	Yes	PORT OPS
08	156.400	156.400	Commercial (inter-ship only)	Yes	No	COMMERCIAL
09	156.450	156.450	Recreational Calling Channel	Yes	Yes	CALLING
10	156.500	156.500	Commercial	Yes	Yes	COMMERCIAL
11	156.550	156.550	Commercial, VTS in Selected Areas	Yes	Yes	VTS
12	156.600	156.600	Port Operations, Selected VTS Areas	Yes	Yes	PORT OPS/VTS
13	156.650	156.650	Intership Navigation Safety (bridge-to-bridge)	Yes	No	BRIDGE COM
14	156.700	156.700	Port Operations, Selected VTS Areas	Yes	Yes	PORT OPS/VTS
15 ¹	156.750	156.750	Port Operations – 1W Only	Yes	Yes	PORT OPS
16	156.800	156.800	International Distress, Safety, and Calling	Yes	Yes	DISTRESS
17 ¹	156.850	156.850	State Controlled – 1W Only	Yes	Yes	SAR
18	156.900	161.500	Port Operations, Duplex	No	Yes	PORT OPS
19	156.950	161.550	Commercial, Duplex	No	Yes	SHIP - SHORE
20	157.000	161.600	Port Operations, Duplex	No	Yes	PORT OPS
21	157.050	161.650	Port Operations, Duplex	No	Yes	PORT OPS
22	157.100	161.700	Port Operations, Duplex	No	Yes	PORT OPS
23	157.150	161.750	Public Correspondence, Duplex	No	Yes	TELEPHONE
24	157.200	161.800	Public Correspondence, Duplex	No	Yes	TELEPHONE
25	157.250	161.850	Public Correspondence, Duplex	No	Yes	TELEPHONE
26	157.300	161.900	Public Correspondence, Duplex	No	Yes	TELEPHONE
27	157.350	161.950	Public Correspondence, Duplex	No	Yes	TELEPHONE
28	157.400	162.000	Public Correspondence, Duplex	No	Yes	TELEPHONE

CH	SEND (MHz)	RECEIVE (MHz)	TRAFFIC TYPE	SHIP TO SHIP	SHIP TO	NAME TAG
60	156.025	160.625	Public Correspondence, Duplex	No	Yes	TELEPHONE
61	156.075	160.675	Port Operations, Duplex	No	Yes	PORT OPS
62	156.125	160.725	Port Operations, Duplex	No	Yes	PORT OPS
63	156.175	160.775	Port Operations, Duplex	No	Yes	PORT OPS
64	156.225	160.825	Public Correspondence, Duplex	No	Yes	TELEPHONE
65	156.275	160.875	Port Operations, Duplex	No	Yes	PORT OPS
66	156.325	160.925	Port Operations, Duplex	No	Yes	PORT OPS
67	156.375	156.375	Commercial, bridge-to-bridge	Yes	No	BRIDGE COM
68	156.425	156.425	Boat Operations, Recreational	Yes	No	SHIP - SHIP
69	156.475	156.475	Port Operations	Yes	Yes	PORT OPS
70 ³	156.525	156.525	Digital Selective Calling - DSC	-----	-----	DSC
71	156.575	156.575	Port Operations	Yes	Yes	PORT OPS
72	156.625	156.625	Intership	Yes	No	SHIP - SHIP
73	156.675	156.675	Port Operations	Yes	Yes	PORT OPS
74	156.725	156.725	Port Operations	Yes	Yes	PORT OPS
77	156.875	156.875	Intership	Yes	No	SHIP - SHIP
78	156.925	161.525	Non-Commercial, Duplex	No	Yes	SHIP - SHORE
79	156.975	161.575	Commercial, Duplex	No	Yes	SHIP - SHORE
80	157.025	161.625	Commercial, Duplex	No	Yes	SHIP - SHORE
81	157.075	161.675	Port Operations, Duplex	No	Yes	PORT OPS
82	157.125	161.725	Port Operations, Duplex	No	Yes	PORT OPS
83	157.175	161.775	Public Correspondence, Duplex	No	Yes	TELEPHONE
84	157.225	161.825	Public Correspondence, Duplex	No	Yes	TELEPHONE
85	157.275	161.875	Public Correspondence, Duplex	No	Yes	TELEPHONE
86	157.325	161.925	Public Correspondence, Duplex	No	Yes	TELEPHONE
87	157.375	161.975	Public Correspondence, Duplex	No	Yes	TELEPHONE
88	157.425	162.025	Public Correspondence, Duplex	No	Yes	TELEPHONE

WEATHER		MHz	TRAFFIC TYPE			NAME TAG
Wx01	RX Only	162.550	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx02	RX Only	162.400	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx03	RX Only	162.475	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx04	RX Only	162.425	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx05	RX Only	162.450	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx06	RX Only	162.500	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx07	RX Only	162.525	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx08	RX Only	161.650	CANADIAN WEATHER CHANNEL	-----	-----	CANADA WX
Wx09	RX Only	161.775	CANADIAN WEATHER CHANNEL	-----	-----	CANADA WX
Wx10	RX Only	163.275	NOAA WEATHER CHANNEL	-----	-----	NOAA WX

SPECIAL NOTES ON INTERNATIONAL CHANNEL USAGE

1. LOW POWER (1W) only.
2. LOW POWER (1W) initially. Override to HIGH POWER by holding down H/L key before transmitting. Used normally in bridge-to-bridge communications.
3. Channel 70 is designated for use exclusively for Digital Selective Calling (DSC), such as Distress, Safety, and Ship Calls. No voice communication is allowed on CH70.
4. The INTERNATIONAL mode is not legal for use in U.S. or Canada waters.

C.2 USA Channel Chart

CH	SEND (MHz)	RECEIVE (MHz)	TRAFFIC TYPE	SHIP TO SHIP	SHIP TO SHORE	NAME TAG
01A	156.050	156.050	Port Operations, Selected VTS Areas	Yes	Yes	PORT OPS/VTS
03A ⁴	156.150	156.150	<i>US Government, Coast Guard</i>	Yes	Yes	UNAUTHORIZED
05A	156.250	156.250	Port Operations, Selected VTS Areas	Yes	Yes	PORT OPS/VTS
06	156.300	156.300	Inter-ship Safety	Yes	No	SAFETY
07A	156.350	156.350	Commercial	Yes	Yes	COMMERCIAL
08	156.400	156.400	Commercial (inter-ship only)	Yes	No	COMMERCIAL
09	156.450	156.450	Recreational Calling Channel	Yes	Yes	CALLING
10	156.500	156.500	Commercial	Yes	Yes	COMMERCIAL
11	156.550	156.550	Commercial, VTS in Selected Areas	Yes	Yes	VTS
12	156.600	156.600	Port Operations, Selected VTS Areas	Yes	Yes	PORT OPS/VTS
13 ³	156.650	156.650	Intership Navigation Safety (bridge-to-bridge), 1W with Power-up	Yes	No	BRIDGE COM
14	156.700	156.700	Port Operations, Selected VTS Areas	Yes	Yes	PORT OPS/VTS
15 ²	RX Only	156.750	Environmental, RX Only	-----	-----	ENVIRONMENTAL
16	156.800	156.800	International Distress, Safety, and Calling	Yes	Yes	DISTRESS
17 ¹	156.850	156.850	State Controlled – 1W Only	Yes	Yes	SAR
18A	156.900	156.900	Commercial	Yes	Yes	COMMERCIAL
19A	156.950	156.950	Commercial	Yes	Yes	COMMERCIAL
20	157.000	161.600	Port Operations, Canadian Coast Guard, Duplex	No	Yes	PORT OPS
20A	157.000	157.000	Port Operations	Yes	Yes	PORT OPS
21A ⁴	157.050	157.050	<i>U.S. Government, Canadian Coast Guard</i>	Yes	Yes	UNAUTHORIZED
22A	157.100	157.100	Coast Guard Liaison	Yes	Yes	COAST GUARD
23A ⁴	157.150	157.150	<i>U.S. Government, Coast Guard</i>	Yes	Yes	UNAUTHORIZED
24	157.200	161.800	Public Correspondence, Marine Operator	No	Yes	TELEPHONE
25	157.250	161.850	Public Correspondence, Marine Operator	No	Yes	TELEPHONE
26	157.300	161.900	Public Correspondence, Marine Operator	No	Yes	TELEPHONE
27	157.350	161.950	Public Correspondence, Marine Operator	No	Yes	TELEPHONE
28	157.400	162.000	Public Correspondence, Marine Operator	No	Yes	TELEPHONE

CH	SEND (MHz)	RECEIVE (MHz)	TRAFFIC TYPE	SHIP TO SHIP	SHIP TO	NAME TAG
61A ⁴	156.075	156.075	<i>U.S. Government, Canadian Coast Guard</i>	Yes	Yes	UNAUTHORIZED
63A	156.175	156.175	Port Operations, VTS in Selected Areas	Yes	Yes	PORT OPS/VTS
64A ⁴	156.225	156.225	<i>U.S. Government, Canadian Commercial Fishing</i>	Yes	Yes	UNAUTHORIZED
65A	156.275	156.275	Port Operations	Yes	Yes	PORT OPS
66A	156.325	156.325	Port Operations	Yes	Yes	PORT OPS
67 ³	156.375	156.375	Commercial, bridge-to-bridge, 1W with Power-up	Yes	No	BRIDGE COM
68	156.425	156.425	Boat Operations, Recreational	Yes	No	SHIP - SHIP
69	156.475	156.475	Boat Operations, Recreational	Yes	Yes	PLEASURE
70 ⁶	156.525	156.525	Digital Selective Calling - DSC	-----	-----	DSC
71	156.575	156.575	Boat Operations, Recreational	Yes	Yes	PLEASURE
72	156.625	156.625	Boat Operations, Recreational	Yes	No	SHIP - SHIP
73	156.675	156.675	Port Operations	Yes	Yes	PORT OPS
74	156.725	156.725	Port Operations	Yes	Yes	PORT OPS
77 ¹	156.875	156.875	Port Operations -1W Only	Yes	Yes	PORT OPS
78A	156.925	156.925	Boat Operations, Recreational	Yes	No	SHIP - SHIP
79A	156.975	156.975	Commercial	Yes	Yes	COMMERCIAL
80A	157.025	157.025	Commercial	Yes	Yes	COMMERCIAL
81A ⁴	157.075	157.075	<i>U.S. Government, Environmental Protection Agency Operations</i>	Yes	Yes	UNAUTHORIZED
82A ⁴	157.125	157.125	<i>U.S. Government, Canadian Coast Guard</i>	Yes	Yes	UNAUTHORIZED
83A ⁴	157.175	157.175	<i>U.S. Government, Canadian Coast Guard</i>	Yes	Yes	UNAUTHORIZED
84	157.225	161.825	Public Correspondence, Marine Operator	No	Yes	TELEPHONE
85	157.275	161.875	Public Correspondence, Marine Operator	No	Yes	TELEPHONE
86	157.325	161.925	Public Correspondence, Marine Operator	No	Yes	TELEPHONE
87	157.375	161.975	Public Correspondence, Marine Operator	No	Yes	TELEPHONE
88	157.425	162.025	Public Correspondence, Marine Operator	No	Yes	TELEPHONE
88A	157.425	157.425	Commercial, Intership Only	Yes	No	COMMERCIAL

WEATHER		MHz	TRAFFIC TYPE			NAME TAG
Wx01	RX Only	162.550	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx02	RX Only	162.400	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx03	RX Only	162.475	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx04	RX Only	162.425	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx05	RX Only	162.450	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx06	RX Only	162.500	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx07	RX Only	162.525	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx08	RX Only	161.650	CANADIAN WEATHER CHANNEL	-----	-----	CANADA WX
Wx09	RX Only	161.775	CANADIAN WEATHER CHANNEL	-----	-----	CANADA WX
Wx10	RX Only	163.275	NOAA WEATHER CHANNEL	-----	-----	NOAA WX

SPECIAL NOTES ON USA CHANNEL USAGE

1. LOW POWER (1 W) only.
2. Receive Only.
3. LOW POWER (1 W) initially. Override to HIGH POWER by holding down H/L key before transmitting. Used normally in bridge-to-bridge communications.
4. Lightly Shaded Simplex channels 03A, 21A, 23A, 61A, 64A, 81A, 82A, and 83A cannot be lawfully used in U.S. waters unless special authorization is obtained from the U.S. Coast Guard. Not for use by the general public.
5. The letter "A" illuminated by the channel number indicates the USA channel is simplex. This same channel is always duplex when selecting International. There is no "A" reference for International channels. The letter "B" is only used for some Canadian "Receive Only" channels.
6. Channel 70 is designated for use exclusively for Digital Selective Calling (DSC), such as Distress, Safety, and Ship Calls. No voice communication is allowed on CH70.

C-3 CANADA Channel CHART

CH	SEND (MHz)	RECEIVE (MHz)	TRAFFIC TYPE	SHIP TO SHIP	SHIP TO SHORE	NAME TAG
01	156.050	160.650	Public Correspondence, Duplex	No	Yes	TELEPHONE
02	156.100	160.700	Public Correspondence, Duplex	No	Yes	TELEPHONE
03	156.150	160.750	Public Correspondence, Duplex	No	Yes	TELEPHONE
04A	156.200	156.200	Canadian Coast Guard, SAR	Yes	Yes	CANADIAN CG
05A	156.250	156.250	Port Operations, VTS in Selected Areas	Yes	Yes	PORT OPS/VTS
06	156.300	156.300	Inter-ship Safety	Yes	No	SAFETY
07A	156.350	156.350	Commercial	Yes	Yes	COMMERCIAL
08	156.400	156.400	Commercial (inter-ship only)	Yes	No	COMMERCIAL
09	156.450	156.450	Recreational Calling Channel	Yes	Yes	CALLING
10	156.500	156.500	Commercial	Yes	Yes	COMMERCIAL
11	156.550	156.550	Commercial, VTS in Selected Areas	Yes	Yes	VTS
12	156.600	156.600	Port Operations, VTS in Selected Areas	Yes	Yes	PORT OPS/VTS
13 ³	156.650	156.650	Intership Navigation Safety (bridge-to-bridge) 1W with power-up	Yes	No	BRIDGE COM
14	156.700	156.700	Port Operations, VTS in Selected Areas	Yes	Yes	PORT OPS/VTS
15 ¹	156.750	156.750	Commercial – 1W Only	Yes	Yes	COMMERCIAL
16	156.800	156.800	International Distress, Safety, and Calling	Yes	Yes	DISTRESS
17 ¹	156.850	156.850	State Controlled – 1W Only	Yes	Yes	SAR
18A	156.900	156.900	Commercial	Yes	Yes	COMMERCIAL
19A	156.950	156.950	Canadian Coast Guard	Yes	Yes	CANADIAN CG
20 ¹	157.000	161.600	Canadian Coast Guard, Duplex – 1W Only	No	Yes	CANADIAN CG
21	157.050	161.650	Port Operations, Duplex	No	Yes	PORT OPS
21A	157.050	157.050	U.S. Government, Canadian Coast Guard	Yes	Yes	UNAUTHORIZED
21B	RX Only	161.650	Port Operations, RX Only	-----	-----	PORT OPS
22A	157.100	157.100	Canadian Coast Guard Liaison	Yes	Yes	CANADIAN CG
23	157.150	161.750	Public Correspondence, Duplex	No	Yes	TELEPHONE
24	157.200	161.800	Public Correspondence, Duplex	No	Yes	TELEPHONE
25	157.250	161.850	Public Correspondence, Duplex	No	Yes	TELEPHONE
25B	RX Only	161.850	Public Correspondence, RX Only	-----	-----	TELEPHONE
26	157.300	161.900	Public Correspondence, Duplex	No	Yes	TELEPHONE
27	157.350	161.950	Public Correspondence, Duplex	No	Yes	TELEPHONE
28	157.400	162.000	Public Correspondence, Duplex	No	Yes	TELEPHONE

CH	SEND (MHz)	RECEIVE (MHz)	TRAFFIC TYPE	SHIP TO SHIP	SHIP TO SHORE	NAME TAG
28B	RX Only	162.000	Public Correspondence, RX Only	-----	-----	TELEPHONE
60	156.025	160.625	Public Correspondence, Duplex	No	Yes	TELEPHONE
61A 4	156.075	156.075	<i>U.S. Government, Canadian Coast Guard</i>	Yes	Yes	UNAUTHORIZED
62A	156.125	156.125	Canadian Coast Guard	Yes	Yes	CANADIAN CG
64	156.225	160.825	Public Correspondence, Duplex	No	Yes	TELEPHONE
64A 4	156.225	156.225	<i>U.S. Government, Canadian Commercial Fishing</i>	Yes	Yes	UNAUTHORIZED
65A	156.275	156.275	Port Operations	Yes	Yes	PORT OPS
66A 1	156.325	156.325	Port Operations – 1W Only	Yes	Yes	PORT OPS
67	156.375	156.375	Commercial, SAR	Yes	No	COMMERCIAL
68	156.425	156.425	Boat Operations, Recreational	Yes	No	SHIP - SHIP
69	156.475	156.475	Commercial Fishing Only	Yes	Yes	COMMERCIAL
70 ⁶	156.525	156.525	Digital Selective Calling - DSC	-----	-----	DSC
71	156.575	156.575	Boat Operations, Recreational	Yes	Yes	PLEASURE
72	156.625	156.625	Intership	Yes	No	SHIP - SHIP
73	156.675	156.675	Commercial Fishing Only	Yes	Yes	COMMERCIAL
74	156.725	156.725	Commercial Fishing Only	Yes	Yes	COMMERCIAL
77 ¹	156.875	156.875	Port Operations – 1W Only	Yes	Yes	PORT OPS
78A	156.925	156.925	Boat Operations, Recreational	Yes	No	SHIP - SHIP
79A	156.975	156.975	Commercial	Yes	Yes	COMMERCIAL
80A	157.025	157.025	Commercial	Yes	Yes	COMMERCIAL
81A 4	157.075	157.075	<i>U.S. Government Operations</i>	Yes	Yes	UNAUTHORIZED
82A 4	157.125	157.125	<i>U.S. Government, Canadian Coast Guard</i>	Yes	Yes	UNAUTHORIZED
83	157.175	161.775	Canadian Coast Guard	Yes	Yes	CANADIAN CG
83A 4	157.175	157.175	<i>U.S. Government, Canadian Coast Guard</i>	Yes	Yes	UNAUTHORIZED
83B	RX Only	161.775	Canadian Coast Guard, RX Only	-----	-----	CANADIAN CG
84	157.225	161.825	Public Correspondence, Marine Operator	No	Yes	TELEPHONE
85	157.275	161.875	Public Correspondence, Marine Operator	No	Yes	TELEPHONE
86	157.325	161.925	Public Correspondence, Marine Operator	No	Yes	TELEPHONE
87	157.375	161.975	Public Correspondence, Marine Operator	No	Yes	TELEPHONE
88	157.425	162.025	Public Correspondence, Marine Operator	No	Yes	TELEPHONE

WEATHER		MHz	TRAFFIC TYPE			NAME TAG
Wx01	RX Only	162.550	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx02	RX Only	162.400	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx03	RX Only	162.475	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx04	RX Only	162.425	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx05	RX Only	162.450	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx06	RX Only	162.500	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx07	RX Only	162.525	NOAA WEATHER CHANNEL	-----	-----	NOAA WX
Wx08	RX Only	161.650	CANADIAN WEATHER CHANNEL	-----	-----	CANADA WX
Wx09	RX Only	161.775	CANADIAN WEATHER CHANNEL	-----	-----	CANADA WX
Wx10	RX Only	163.275	NOAA WEATHER CHANNEL	-----	-----	NOAA WX

SPECIAL NOTES ON CANADA CHANNEL USAGE

1. LOW POWER (1 W) only.
2. Receive Only.
3. LOW POWER (1 W) initially. Override to HIGH POWER by holding down H/L key before transmitting. Used normally in bridge-to-bridge communications.
4. Lightly Shaded Simplex channels 21A, 23A, 61A, 64A, 81A, 82A, and 83A cannot be lawfully used in Canada waters unless special authorization is obtained from the Canadian Coast Guard. Not for use by the general public.
5. The letter "A" illuminated by the channel number indicates the Canada channel is simplex. This same channel is always duplex when selecting International. There is no "A" reference for International channels. The letter "B" is only used for some Canadian "Receive Only" channels.
6. Channel 70 is designated for use exclusively for Digital Selective Calling (DSC), such as Distress, Safety, and Ship Calls. No voice communication is allowed on CH70.
7. The CANADA mode is not legal to use in U.S. waters.

C-4 EU Channel Chart

CH	SEND (MHz)	RECEIVE (MHz)	TRAFFIC TYPE	SHIP TO SHIP	SHIP TO SHORE	NAME TAG
01	156.050	160.650	Public Correspondence, Duplex	No	Yes	TELEPHONE
02	156.100	160.700	Public Correspondence, Duplex	No	Yes	TELEPHONE
03	156.150	160.750	Public Correspondence, Duplex	No	Yes	TELEPHONE
04	156.200	160.800	Port Operations, Duplex	No	Yes	PORT OPS
05	156.250	160.850	Port Operations, VTS in Selected Areas	No	Yes	PORT OPS/VTS
06	156.300	156.300	Inter-ship Safety	Yes	No	SAFETY
07	156.350	160.950	Port Operations, Duplex	No	Yes	PORT OPS
08	156.400	156.400	Commercial (inter-ship only)	Yes	No	COMMERCIAL
09	156.450	156.450	Recreational Calling Channel	Yes	Yes	CALLING
10	156.500	156.500	Commercial	Yes	Yes	COMMERCIAL
11	156.550	156.550	Commercial, VTS in Selected Areas	Yes	Yes	VTS
12	156.600	156.600	Port Operations, Selected VTS Areas	Yes	Yes	PORT OPS/VTS
13	156.650	156.650	Intership Navigation Safety (bridge-to-bridge)	Yes	No	BRIDGE COM
14	156.700	156.700	Port Operations, VTS in Selected Areas	Yes	Yes	PORT OPS/VTS
15 ¹	156.750	156.750	Port Operations – 1W Only	Yes	Yes	PORT OPS
16	156.800	156.800	International Distress, Safety, and Calling	Yes	Yes	DISTRESS
17 ¹	156.850	156.850	State Controlled – 1W Only	Yes	Yes	SAR
18	156.900	161.500	Port Operations, Duplex	No	Yes	PORT OPS
19	156.950	161.550	Commercial, Duplex	No	Yes	SHIP - SHORE
20	157.000	161.600	Port Operations, Duplex	No	Yes	PORT OPS
21	157.050	161.650	Port Operations, Duplex	No	Yes	PORT OPS
22	157.100	161.700	Port Operations, Duplex	No	Yes	PORT OPS
23	157.150	161.750	Public Correspondence, Duplex	No	Yes	TELEPHONE
24	157.200	161.800	Public Correspondence, Duplex	No	Yes	TELEPHONE
25	157.250	161.850	Public Correspondence, Duplex	No	Yes	TELEPHONE
26	157.300	161.900	Public Correspondence, Duplex	No	Yes	TELEPHONE
27	157.350	161.950	Public Correspondence, Duplex	No	Yes	TELEPHONE
28	157.400	162.000	Public Correspondence, Duplex	No	Yes	TELEPHONE

CH	SEND (MHz)	RECEIVE (MHz)	TRAFFIC TYPE	SHIP TO SHIP	SHIP TO SHORE	NAME TAG
60	156.025	160.625	Public Correspondence, Duplex	No	Yes	TELEPHONE
61	156.075	160.675	Port Operations, Duplex	No	Yes	PORT OPS
62	156.125	160.725	Port Operations, Duplex	No	Yes	PORT OPS
63	156.175	160.775	Port Operations, Duplex	No	Yes	PORT OPS
64	156.225	160.825	Public Correspondence, Duplex	No	Yes	TELEPHONE
65	156.275	160.875	Port Operations, Duplex	No	Yes	PORT OPS
66	156.325	160.925	Port Operations, Duplex	No	Yes	PORT OPS
67	156.375	156.375	Commercial, bridge-to-bridge	Yes	No	BRIDGE COM
68	156.425	156.425	Boat Operations, Recreational	Yes	No	SHIP - SHIP
69	156.475	156.475	Port Operations	Yes	Yes	PORT OPS
70 ³	156.525	156.525	Digital Selective Calling - DSC	-----	-----	DSC
71	156.575	156.575	Port Operations	Yes	Yes	PORT OPS
72	156.625	156.625	Intership	Yes	No	SHIP - SHIP
73	156.675	156.675	Port Operations	Yes	Yes	PORT OPS
74	156.725	156.725	Port Operations	Yes	Yes	PORT OPS
77	156.875	156.875	Intership	Yes	No	SHIP - SHIP
78	156.925	161.525	Non-Commercial, Duplex	No	Yes	SHIP - SHORE
79	156.975	161.575	Commercial, Duplex	No	Yes	SHIP - SHORE
80	157.025	161.625	Commercial, Duplex	No	Yes	SHIP - SHORE
81	157.075	161.675	Port Operations, Duplex	No	Yes	PORT OPS
82	157.125	161.725	Port Operations, Duplex	No	Yes	PORT OPS
83	157.175	161.775	Public Correspondence, Duplex	No	Yes	TELEPHONE
84	157.225	161.825	Public Correspondence, Duplex	No	Yes	TELEPHONE
85	157.275	161.875	Public Correspondence, Duplex	No	Yes	TELEPHONE
86	157.325	161.925	Public Correspondence, Duplex	No	Yes	TELEPHONE
87	157.375	157.357	Intership	Yes	No	SHIP - SHIP
88	157.425	157.425	Intership	Yes	No	SHIP - SHIP

Special Channels ⁷

CH	SEND (MHz)	RECEIVE (MHz)	TRAFFIC TYPE	SHIP TO SHIP	SHIP TO SHORE	NAME TAG
00 ⁶	156.000	156.000	UK Coast Guard Users	Yes	Yes	UK COAST GRD
M1	157.425	157.850	UK Marina Channel M1	Yes	Yes	UK MARINA
M2	161.425	161.425	UK Marina Channel M2	Yes	Yes	UK MARINA
31	157.550	162.150	INT'L, Duplex (Holland)	No	Yes	NL MARINA
96H	162.425	162.425	INT'L (Belgium)	No	Yes	BEL G MARINA
L1	155.500	155.500	INT'L (Scandinavia)	Yes	no	LEISURE 1
L2	155.525	155.525	INT'L (Scandinavia)	Yes	no	LEISURE 2
L3	155.650	155.650	INT'L (Scandinavia – not in Denmark)	Yes	no	LE ISURE3
F1	155.625	155.625	INT'L (Scandinavia)	Yes	no	FISHING 1
F2	155.775	155.775	INT'L (Scandinavia)	Yes	no	FISHING 2
F3	155.825	155.825	INT'L (Scandinavia) call back	Yes	no	FISHING 3
AIS1	161.975	161.975	AIS1	----	----	----
AIS2	162.025	162.025	AIS2	----	----	----

SPECIAL NOTES ON EUROPEAN INTERNATIONAL CHANNEL USAGE

1. LOW POWER (1 W) only.
2. LOW POWER (1 W) initially. Override to HIGH POWER by holding down H/L key before transmitting. Used normally in bridge-to-bridge communications.
3. Channel 70 is designated for use exclusively for Digital Selective Calling (DSC), such as Distress, Safety, and Ship Calls. No voice communication is allowed on CH70.
4. The INTERNATIONAL mode is not legal for use in U.S.A. or Canada waters.
5. No WX channels are available.
6. Lightly Shaded Simplex channel CH00 is only available in the UK to Coast Guard users with written authorization.
7. The special channels above maybe fitted to your radio. These are only licensed for use in the country indicated. No attempt should be made to use them in any other country.

Appendix D - MMSID and License Information

VHF 7100 only

You must obtain a user MMSID (Marine Mobile Service Identity) and enter it into your 7100 in order to use the DSC functions. Contact the appropriate authorities in your country. If you are unsure who to contact, consult your Navman dealer.

The user MMSID is a unique nine digit number, similar to a personal telephone number. It is used on marine transceivers that are capable of using DSC (Digital Select Calling).

Depending upon your location, you may need a radio station license for the VHF 7100. You may also need an individual operator's license.

Navman NZ recommends that you check the requirements of your national radio communications authorities before operating DSC functions.

Appendix E - How to Contact Us

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Made in China

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